

IN THE HIGH COURT OF MALAYA AT KUALA LUMPUR
(APPELLATE AND SPECIAL POWERS DIVISION)
JUDICIAL REVIEW APPLICATION NO.....OF 2012

In the matter of Articles 5, 8 and 13 of the Federal Constitution

And

In the matter of the Atomic Energy Licensing Act 1984 (Act 304) and the subsidiary legislation made thereunder.

And

In the matter of the Environmental Quality Act 1984 (Act 304) and the subsidiary legislation made thereunder.

And

In the matter of Paragraph 1 of the Schedule to the Courts of Judicature Act 1964 and Order 53 of the Rules of the High Court 1980

And

In the matter of the decision by the Atomic Energy Licensing Board made on 30th January 2012 to approve the application by Lynas Malaysia Sdn Bhd for a temporary operating licence for the Lynas Advanced Materials Plant in Gebeng, Kuantan.

BETWEEN

1. ZAKARIA BIN ABDULLAH
2. RAMLI @ KAMALUDDIN BIN AWANG
3. AB SANI BIN AHMAD

4. MOHD RASID BIN HAMZAH
5. MANSOR BIN BEDU
6. ALI AKBAR BIN OTHMAN
7. HASHIM BIN AWANG
8. NADARAJAN A/L RAJU
9. PANG CHEE KIAN
10. TUW YIN LAN (F)

APPLICANTS

AND

1. ATOMIC ENERGY LICENSING BOARD
2. DIRECTOR GENERAL OF ENVIRONMENTAL QUALITY
3. LYNAS MALAYSIA SDN BHD

RESPONDENTS

AFFIDAVIT

I, **ZAKARIA BIN ABDULLAH**, [NRIC No. 600114-11-5105],
 a Malaysian citizen of full age of No. 2, Lorong Balok Makmur 5,
 Taman Balok Makmur, 26100 Kuantan, Pahang Darul Makmur, affirm
 and state as follows:-

1. I am the First Applicant in this matter, and have been duly authorized by the other Applicants to make this Affidavit on their behalf.
2. The facts and matters contained in this Affidavit are from my personal knowledge, unless otherwise stated. The facts relating to

the proposed Lynas plant at Gebeng, Pahang have received so much international and national media coverage that I am fully aware of them. Further, there are numerous associations and groups of concerned persons who have published critical material on the subject, which I have studied or have been reported to me by our friends. The Member of Parliament for Kuantan, YB Puan Fuziah binti Salleh has led the opposition to the Lynas project. I have been briefed by her on many occasions. Finally, because the plant is just 3 kilometres from my house, I would be directly affected by any operation there : hence, I have been following developments concerning the Lynas plant with great personal interest. For all these reasons, I have personal knowledge of the matters stated in this Affidavit.

3. I crave leave of this Honourable Court to refer to the Statement in this matter, which, my solicitors advice and I believe, is made in accordance with Order 53 Rule 3(2) of the Rules of the High Court 1980. I affirm the truth of its contents, and adopt them as part of this Affidavit.
4. This application is filed to judicially review the decision of the 1st Respondent, which on 30th January 2012, approved an application by the 3th Respondent for a temporary operating licence to operate a rare earth refinery known as the Lynas Advanced Materials Plant (“**LAMP**”). LAMP is intended to be built on industrial land located

within the Gebeng Industrial Estate (**“Gebeng”**) in Kuantan, Pahang (“the LAMP” site).

A. PARTIES

5. The details of the Applicants are as follows (in respect of the details of the other Applicants they are based on information provided by them to me, which I verily believe to be true):

- (i) I live at my own house in No. 2, Lorong Balok Makmur 5, Taman Balok Makmur, 26100 Kuantan. I am the owner of this property. I am employed as an executive. I am married with 6 children who are aged 8 to 23 years, all of whom still live with me and my wife (although 2 are currently away studying at university). We have lived in Balok Makmur, one of the closest housing areas to the Gebeng Industrial Estate, for about 19 years. It is situated about 3 km from LAMP’s site;
- (ii) The 2nd Applicant, Ramli @ Kamaluddin bin Awang (NRIC No. 560127-06-5297) is now retired from the navy where he was a warrant officer. He lives in his own house at No 7, Lorong 4, Balok Makmor, 26100 Kuantan together with his wife, 4 of his 6 children,

ranging from 16 to 29 years of age, and one grandchild aged 1 year 9 months. Two of his children have already married, and one lives nearby with his wife at Taman PSJ, Kampung Sungai Karang, which is also near to Balok Makmur and Gebeng;

- (iii) The 3rd Applicant, Ab Sani bin Ahmad (NRIC No. 551019-01-5677) is a Production Shift Manager who has lived at his own house at No. 40, Lorong 12, Taman Balok Makmur, 26100 Kuantan since 1993 and has worked in the Gebeng area since 1988. He has 7 children, 5 of whom still live with him and whose ages range from 2 to 21 years.
- (iv) The 4th Applicant is Mohd Rasid Hamzah (NRIC No. 640825-11-5159), a mechanical fitter. He lives in his own house at No. 39, Lorong Balok Makmur 16, Taman Balok Makmur, 26100 Kuantan with his wife and 5 children aged between 1 to 16 years;
- (v) The 5th Applicant is Mansor bin Bedu (NRIC No. 511116-06-5063) who is a retired security officer at the Kuantan Port Consortium lives at his own house at No. 14, Lorong 5, Perkampungan Balok Baru, 26100 Kuantan. Perkampungan Balok Baru is right next to

Balok Makmor, and approximately 3 to 3.5 km from the LAMP site;

- (vi) The 6th Applicant is Ali Akbar bin Othman (NRIC No. 710813-06-5095), who is self employed living in his own house at No. 68, Lorong Chengal Lempong Baru 17, Perkampungan Chengal Lempong Baru 2, 26100 Kuantan. He has lived there for almost 10 years with his wife. Their house is approximately 5 km from the LAMP site;
- (vii) The 7th Applicant is Hashim bin Awang (NRIC No. 690222-06-5071), a small housing contractor living in his own house at No. 191, Kampung Sungai Karang Darat, 26100 Kuantan with his parents and younger sister. This area is about 6 to 7 km from the LAMP site;
- (viii) The 8th Applicant, Nadarajan a/l Raju (NRIC No. 671128-06-5207) is self employed. He is married with 3 children, all of whom live with him at his house at No. 332, Jalan Haji Ahmad, 25300 Kuantan, which is about 18 km from the LAMP's site;
- (ix) The 9th Applicant, Pang Chee Kian (NRIC No.: 580704-01-5379) is also self employed and lives at

326, Jalan Haji Ahmad, 25350 Kuantan. He, his wife and 4 of his 5 children live with him in his house; and

- (x) The 10th Respondent, Tuw Yin Lan (NRIC No. 420310-08-5064) lives in rented accommodation at E 863, Tingkat 1, Jalan Seri Teruntum 99, 25100 Kuantan. She is self employed.

6. The 1st Respondent is the Atomic Energy Licensing Board (**“Board”**), established under Section 3 of the Atomic Energy Licensing Act 1984 (**“AELA”**). I am advised by our solicitors and verily believe that:-

- (i) The duties, functions and powers of the Board are *“inter alia”* under 12(1)(b) of the AELA to exercise control and supervision over the production, application and use of atomic energy and radioactive material, including radioactive waste; and
- (ii) In carrying out these functions, the Board is empowered to issue licences *“inter alia”* to those dealing in, possessing or disposing of any radioactive material, nuclear material, prescribed substance or irradiating apparatus within the meaning of the AELA, and its subsidiary legislation.

7. The 2nd Respondent is the Director-General of Environmental Quality ("**DG**") established under Section 3 of the Environmental Quality Act 1974 ("**EQA**"). I am advised by our solicitors and verily believe that:-

- (i) the duties, functions and powers of the DG are "*inter alia*" to administer the EQA, and all subsidiary legislation made thereunder; and.
- (ii) pursuant to Section 34A of the EQA to require persons who intend to carry out "*Prescribed Activities*" (as defined under the Act), to submit an Environmental Impact Assessment Report ("**EIA**") to the DG before any approval for the carrying out of such activities is granted by the relevant approval authority.

8. The 3rd Respondent is Lynas Malaysia Sdn Bhd (752289-D) (**Lynas Malaysia**), a private company incorporated in November 2006 under the Companies Act 1965 of Malaysia, with its registered address and principal place of business at No. 72, Jalan Gebeng 1/24, Bandar Industri Gebeng Jaya, 26080 Kuantan. Lynas is a wholly owned subsidiary of Lynas Corporation Limited of Australia ("**Lynas Australia**"). Lynas Australia is a public company incorporated in Australia. Its shares are listed for trading on the Australian Stock Exchange. Copies of a Companies Commission of Malaysia search report on Lynas Malaysia and the Annual Report

of Lynas Australia for 2011 obtained from their website at www.lynascorp.com are now produced and shown to me and marked as **Exhibits “Z-1 and Z-2”**.

B. THE DECISION

9. On 30th January 2012, the Board approved an application by Lynas Malaysia for a temporary operating licence (“TOL”) pursuant to Regulation 23 of the Radiation Protection (Licensing) Regulations 1988 (“**the RPL Regulations**”) to operate the LAMP site.

- (i) A copy of a Press Statement by the Executive Secretary of the Board dated 1st February 2012 announcing the decision together with an English translation done by our researcher is now produced and shown to me and marked as **Exhibit “Z-3”**. Also produced and shown to me and marked collectively as **Exhibit “Z-4”** are samples of the articles published by the media on the decision.
- (ii) A copy of a private search report on the titles to the lands where the LAMP site is situated are now produced and shown to me and marked as **Exhibit “Z-5”**.

C. RARE EARTH

10. Based on the searches on the Internet¹ conducted by my solicitors, a Lynas “Info Pack” provided by the Ministry of International Trade and Industry² and from a presentation by a chemical engineer Dr C. H. Lee (all of which are now produced and shown to me and marked as ***Exhibits “Z-6”, “Z-7” and “Z-8”*** respectively), and based on information in the public domain, I wish to state that :-

- (i) Rare earth elements are a set of seventeen (17) chemical elements in the periodic table, specifically the fifteen (15) chemicals collectively called *lanthanides*, and 2 other elements;
- (ii) Rare earth elements, although plentiful in the Earth’s crust, are usually dispersed and not often found in concentrated and economically exploitable forms. The few economically exploitable deposits are known as rare earth minerals;
- (iii) The nature of rare earths is such that it is commonly found as an ore called “Monazite”, together with

¹ <http://pcworld.co.nz/pcworld/pcw.nsf/news/common-gadgets-may-be-affected-by-shortage-of-rare-earths> and http://en.wikipedia.org/wiki/Rare_earth_elements

² http://www.miti.gov.my/cms/content.jsp?id=com.tms.cms.section.Section_3ff9fd7c-c0a81573-7a607a60-e6279f5e%20

deposits of other minerals, chemical compounds and also the radioactive materials, thorium and uranium;

- (iv) The processing of rare earths requires the extraction of lanthanides from ore, leaving behind thorium, uranium and other waste materials. In general, all these wastes are collectively known as “gypsum”;
- (v) Rare earth is used to manufacture products which result in the miniaturisation of electronic components for use in capacitors, lasers and powerful magnets, greenhouse emissions reducing products like automotive catalytic converters, hybrid vehicles and wind turbines and military weapons like cruise missiles, radar systems and precision guided munitions; and
- (vi) No manufacture or processing of rare earth elements can be carried out without the creation of waste. In other words, waste is the inevitable consequence of the manufacture or processing of rare earth elements. Waste cannot, under any circumstances, be eliminated from this process.

D. CHINA'S RARE EARTH INDUSTRY

11. Our researches indicate that China controls nearly 97% of the world's rare earth element market. The critical feature of China's rare earth industry is the environmental damage that it has caused, which has resulted in the Chinese Government taking steps in recent years to regulate the industry, which in turn has caused a reduction in supply to the world market of Chinese rare earth. In an article entitled "*Chinese Rare Earth Elements Industry : What can the West Learn*" published in March 2010 by the Institute for the Analysis of Global Security, Cindy Hurst, who is an analyst with the USA military, highlighted the environmental disasters caused by the rare earth industry in China. Now produced and shown to me and marked as **Exhibit "Z-9"** is a copy of her article.
12. We would like to refer to the following passages from her article describing China's rare earth industry:-

"Introduction

Rare earth elements are also essential for the defense industry and are found in cruise missiles, precision guided munitions, radar systems and reactive armor.

(pg 3)

Definition of Rare Earth Elements

The term rare earth is actually a misnomer. They are not rare at all, being found in low concentrations throughout the Earth's

crust, and in higher concentrations in numerous minerals. Rare earth elements can be found in almost all massive rock formations. However, their concentrations range from ten to a few hundred parts per million by weight. Therefore, finding them where they can be economically mined and processed presents a real challenge.

(pg 3 & 4)

Producing Rare Earth Oxides: No Small Task

A better appreciation of rare earth elements and the difficulty in acquiring them is attained by examining how they are processed. Dr. John Burba, Chief Technology Officer at Molycorp Minerals, the company that runs the only rare earth mining operation in the U.S., pointed out that, "a lot of people don't quite understand why rare earth operations are different (from other mining operations)." Mining gold, for example, is a much simpler procedure than mining rare earth elements.

Rare earth elements are far more complicated and costly to extract.

(pg 4)

In total, the process takes approximately 10 days from the point when the ore is taken out of the ground to the point at which the rare earth oxides are actually produced. The mining and processing of rare earth elements, if not carefully controlled, can create environmental hazards. This has happened in China.

(pg 5)

Severe environmental damage

A major concern surrounding China's practice of mining rare earth elements is the negative impact it has to the environment due to lax mining practices. There are a number of potential environmental implications to mining rare earth elements if not done properly.

According to an article published by the Chinese Society of Rare Earths, "Every ton of rare earth produced, generates

approximately 8.5 kilograms (18.7lbs) of fluorine and 13 kilograms (28.7lbs) of dust; **and using concentrated sulfuric acid high temperature calcinations techniques to produce approximately one ton of calcined rare earth ore generates 9,600 to 12,000 cubic meters (339,021 to 423,776 cubic feet) of waste gas containing dust concentrate, hydrofluoric acid, sulfur dioxide, and sulfuric acid, approximately 75 cubic meters (2,649 cubic feet) of acidic wastewater, and about one ton of radioactive waste residue (containing water).**" Furthermore, according to statistics conducted within Baotou, where China's primary rare earth production occurs, **"all the rare earth enterprises in the Baotou region produce approximately ten million tons of all varieties of wastewater every year" and most of that waste water is "discharged without being effectively treated, which not only contaminates potable water for daily living, but also contaminates the surrounding water environment and irrigated farmlands."**

(pg 16)

According to Wang Caifeng, China's Deputy Director-General of the Materials Department of the Ministry of Industry and Information Technology, producing **one ton of rare earth elements creates 2,000 tons of mine tailings**. Wang said that China has sacrificed greatly in its extraction of rare earths.

The ore mined in Bayao Obo is transported to Baotou via open railway carts, where it is then processed. Unfortunately, with old, outdated technology, equipment, and little oversight, **the waste finds its way into the Yellow River, which passes by the south side of Baotou and travels about another 1,300 miles, through mountainous terrain as well as through heavily populated areas before finally dumping into the Yellow Sea.**

In 2005, Xu Guangxian wrote that thorium was a source of radioactive contamination in the Baotou area and the Yellow River. According to a local source, who asked not to be identified, **"In the Yellow River, in Baotou, the fish all died. They dump the waste- chemicals into the river. You cannot eat the fish because they are polluted."** Some 150 million people depend on the river as their primary source of water.

(pg 16 & 17)

The most common disease in Baotou is pneumoconiosis, better known as black lung. There are 5,387 residents in Baotou who suffer from black lung, which makes up more than 50 percent of the cases in the autonomous region.

While China might have general pollution control standards, the country has never actually worked out pollutant discharge standards for the rare earth industry. As the rare earth industry in China has rapidly grown, there has been no effective way to control the usual pollutants such as ammonia, nitrogen and thorium dust, which are emitted during the production phase.

(pg 18)

New regulations to protect the environment

China does not have pollutant discharge standards for the rare earth industry. Environmental issues behind the mining of rare earth elements are a huge concern. The differences between Western mining efforts and those seen in China today are staggering.

(pg 23)”

[my emphasis]

13. We contend that when the Board was considering the application by Lynas for a TOL, it should not only have considered the Chinese experience in dealing with radioactive waste but should have given substantial weight to the environment devastation caused by the introduction of thorium and uranium into our environment. This is particularly because there is so much

material in the public domain, including in the Internet on the damage done to China's environment by the rare earth industry.

14. Further, having regard to China's predominant role in this industry, it is incumbent on the Board to have taken into account the Chinese experience. Failure to do so was to act irresponsibly.

E. LYNAS PROJECT — MOUNT WELD, AUSTRALIA

15. According to information published by Lynas which is publicly available, the two Lynas companies propose to undertake manufacturing or processing works in the LAMP site over the next 20 years or so (the Lynas Project):

- (i) Lynas Australia claims to own the richest deposit of lanthanides in the world at Mount Weld, Western Australia, where it operates an open pit mine;
- (ii) Lynas Australia proposes to mine the lanthanide ore at Mount Weld, which ore is then transported to the adjacent Concentration Plant for subsequent processing and enrichment by a series of crushing and filtration. The resultant product, known as concentrates, will be slightly moisted (at about 20%),

and then trucked a distance of 1000 km to the port of Fremantle in Western Australia before being shipped to the port of Kuantan, Malaysia for use in the LAMP site;

- (iii) The concentrates will then be processed at the LAMP site to produce high purity lanthanide compounds. The primary activity in the LAMP site would be to extract and to purify the lanthanides from the concentrates, and to segregate the unwanted chemical compounds, including thorium, uranium, phosphates and sulphates which will then be purged in the form of gypsum. Six different products will be produced from the lanthanide compounds which are to be extracted in the LAMP site. According to Lynas Australia, these products will then be exported directly to Lynas's global consumers based in the US, Japan, Europe and elsewhere; and
- (iv) This process will leave waste water, flue gas and three main "gypsum" wastes : one of which is regarded as containing a low concentration of radioactive materials, namely, thorium and uranium, and the other two would be considered "hazardous scheduled wastes".

16. The operations carried on by Lynas in Mount Weld have been the subject of much criticism in Australia. Numerous environmental groups, including the Green Party which is represented in the Australian Parliament, have called attention to the environmental hazards associated with the Mount Weld operations. Likewise, numerous articles have been published and papers presented by countless independent experts on Mount Weld. Now produced and shown to me and marked as **Exhibit "Z-10"** is a copy of an article entitled "*Rare Earth Ores and Radiation Risks at Lynas Corporation's Mt Weld Operation*" by Lee Bell of National Toxics Network, Bangalow, NSW, Australia, published in November 2011.
17. We would like to refer to these relevant observations made by Lee Bell in his article:-

"The National Toxics Network (NTN) has been investigating the potential for radioactive contamination arising from the Lynas' rare earth concentrate plant at Mt Weld, near Laverton Western Australia. NTN is concerned a regulatory loophole is being utilized to improperly transport radioactive materials through WA suburbs to be shipped to Malaysia.

According to environmental and mining authorities in Western Australia, the waste slurry generated from the chemical processing and flitration of the rare earth ores at Lynas Corporation's Mt Weld concentrator plant is radioactive. The radiation is primarily due to the thorium and uranium content of the ore.

The tailings from the ore concentrator have also been deemed radioactive by the state Department of Mining and Petroleum".

“This concentrating factor has not been assessed by authorities and could result in radioactivity levels many times higher than claimed in the proponent’s reports especially towards the end of the mine life. As the ponds dry out airborne dust containing radioactive particles will become a major management problem for decades to come.

If Lynas had received government approvals and used the initial tailings ponds they constructed, they would have leaked at an estimated 186,000 litres per day or over 67 million litres per annum of radioactive leachate.

The DEC Environmental Assessment Report for the concentrator plant makes it clear that Lynas Corporation failed to meet the regulatory controls and conditions put in place to prevent environmental contamination from processing rare earth ore tailings production. It also raises considerable doubt about their ability to meet waste disposal regulations and environmental protection requirements in other jurisdictions such as Malaysia.

[page 2]

Radioactive tailings leakage – a licence to pollute.

The “tailings” or waste material from the processing of rare earth ores at Mt Weld into a concentrate, contains 500ppm ThO₂ (thorium Oxide) and 30ppm U₃O₈ (Uranium Oxide). The calculated radiation specific activity from this combination is 1.80Bq/g for the Thorium and 0.32 Bq/g for the Uranium which totals 2.12 Bq/g. This is more than twice the threshold radioactivity level set by the Department of Mining and Petroleum for classification as radioactive tailings (‘radioactive’ classification is in excess of 1.0 Bq/g).

A review of the integrity of the tailings ponds by Lynas engineering consultants knight Piesold in 2009 found alarming evidence that the radioactive waste material would have been able to leak at the rate of 186,000 litres per day if the ponds had started to accept tailings. WA authorities ordered Lynas to fix their tailings facility after finding that the construction was grossly inadequate and a small tailings pond has now been lined with HDPE plastics to act as an interim waste storage pond. The remainder of the large tailing pond will now have to be re-engineered with HDPE over time.

Far from their claims of being a clean, green industry Lynas Corporation are prepared to allow the leakage of over 5 million litres of radioactive tailings every year at the site of their concentrator plant. The concentrator plant has been operating since May 2011 and 2.5 million litres of contaminated tailings have already leaked from the facility if the Department of Environment and Conservations predictions are correct. No monitoring data from the site has been released to the public as yet”.

[page 2 and 3]

“Notably, Malaysia also classifies waste or radioactive materials as ‘radioactive’ when the specific radioactivity level exceeds 1.0 Bq/g. This is the reason why Lynas Corporation ‘product’ or rare earth concentrate will be regulated as radioactive material for transportation purposes, from the moment it lands in Malaysia. “

[page 4]

“Further it can be argued that the Lynas Advanced Materials Plant (LAMP) in Malaysia will process the material to extract the radioactive elements uranium and thorium as well as other impurities. The impurities will then be dumped as part of the LAMP waste stream in Malaysia. As such the exemption from radioactive transport requirements in WA appears to be based on proponent assurances rather than sound science”.

[page 5]

[my emphasis]

18. We contend that when considering the application by Lynas for a TOL, the Board ought to have intensively scrutinized Lynas’s track record in dealing with environmental issues in the Mt Weld operations, and the opinions and comments made by its critics, which are widely available in the public domain. Further, the lack of any experience by Lynas Australia in dealing with the critical

issue of radioactive waste on a permanent basis ought to have caused acute concern to the Board.

19. Accordingly, we contend that the Board did not comply with the legal requirements of a regulator in considering properly or at all the manner in which Lynas Australia dealt with the massive problem of radioactive waste in its home jurisdiction.

F. BUKIT MERAH

20. In 1979, Asian Rare Earth Sdn Bhd (“ARE”) was incorporated under the laws of Malaysia to carry on the business of extracting a type of rare earth called yttrium from monazite. The principal shareholder was Mitsubishi Chemical Industries Ltd. of Japan, which also provided engineering expertise. In 1982, ARE’s rare earth plant started operation in Bukit Merah, some 7km from Ipoh. Radioactive waste, including thorium, was dumped in sites in Bukit Merah. Numerous international scientists of repute visited Bukit Merah, and advised that the radiation levels were at a dangerous level. I have become familiar with the facts relating to Bukit Merah when I read a Chronology of Events from the internet³, a copy of which is now produced and shown to me and marked as ***Exhibit “Z-11”***.

³

www.consumer.org.my/index.php/health/454-chronology-of-events-in-the-bukit-merah-asian-rare-earth-developements

21. According to this Chronology, although the Supreme Court in 1993 overturned a decision of the High Court in 1992 to close the Bukit Merah plant, in 1994 ARE voluntarily closed the plant. This was due to immense national and international pressure. In 2010, 80,000 200-litre drums were discovered in dumps in the Kledang Range containing thorium hydroxide. The dump site is about 3km from Bukit Merah and Papan. The on-going clean-up of the 30-year problems created by ARE in Bukit Merah would apparently cost Malaysian taxpayers the sum of RM300 million.
22. In April 2002, a paper entitled “**RARE EARTH PROCESSING IN MALAYSIA: CASE STUDY OF ARE AND MAREC PLANTS**” was presented by Meor Yusof M.S. and Latifah A. of the Malaysian Institute for Nuclear Technology Research at a Regional Symposium on Environment and Natural Resources held in Kuala Lumpur. Now produced and shown to me is a copy of the said paper marked as “**Exhibit-Z-12**”. We would like to highlight the following passages in this paper concerning the Bukit Merah Plant:-

“(a) RARE EARTHS MINERAL PROCESSING

INDUSTRY IN MALAYSIA

Asian rare earth(ARE)

ARE is a monazite cracking plant located at Bukit Merah Industrial Estate which is about 7km from Ipoh, the capital city of the tin-rich state of Perak. The company

was established as a joint venture between Mitsubishi Chemical Industries Ltd, Japan, BEH Minerals Sdn Bhd and other local companies to produce mixed rare earths products. Besides the light and heavy rare earths, the plant also produces tricalcium phosphate as a by-product from the process. **On operating at full capacity, ARE production per annum is 4200 tons of light rare earth, 550 tons of heavy rare earths and 4400 tons of tricalcium phosphate.** These rare earths products normally contained 50-55% total rare earths and they are exported to the Mitsubishi purification plant in Japan for further separation and purification.....A few years after operating, ARE faces protests from nearby residences on its radiations safety. The plant was forced to suspend its operation in the early 90s by a decree from the High Court but later the order was revoked by a higher court. In 1994, a decision was made by the shareholders for the plant to cease its operation. Besides the protests, the closure was primarily attributed to the company operating losses from the effect of global low prices of mixed rare earth products. **The responsibility of the radioactive waste produced from this plant becomes the single most important issue after this closure....."**

[page 290 to 292]

"(b) WHY THE MALAYSIAN RARE EARTHS

PROCESSING INDUSTRY FAILS

Radioactive Issue

There are several reasons for the failure of both the MAREC and ARE plants in Malaysia. **The most notable reason is environmental issue especially radioactive resistance due to the proximity of these plants to nearby residents. These resistances come both from the safety of the process and also the thorium hydroxide waste produced and stored on the plant site.** From these complaints, the local radioactive regulatory body, Atomic Energy Licensing Board (AELB) had made studies on the safety of the plant process and from this a stricter safety procedure was imposed.

Thorium Hydroxide waste contains highly concentrated long lived radioactiven elements thorium and uranium, classified as radioactive waste under Atomic Energy Licensing Act, 1984. This Act also stated that the waste had to be stored or disposed at a safe and suitable location. ARE asked the Perak state government for a long-term radioactive waste storage facility and this was agreed to a 84.2 acres hilltop site in Bukit Kledang. The implementation for a stricter working procedure as well as the construction and transportation of radioactive waste to its new site incurred further financial costs to the company.

After the closure of the ARE plant, further expenditure is incurred in the decommissioning and decontamination (D&D) of radioactive contaminated materials. The D&D activities involved includes:-

- (a) Dismantling of buildings, equipments and machineries*
- (b) Dispose of contaminated materials in engineered cells*
- (c) Monitoring of designated area*

Further financial allocation had to be made to ensure that the radioactive waste stored in the long-term storage facility will be stable and safe in years ahead."

[page 293]

[my emphasis]

23. The largest radiation cleaning in the rare earth industry took place after the Bukit Merah plant was closed down. Now produced and shown to me is a copy of an article entitled "Mitsubishi Quietly Clean Up Its Former Refinery" by Keith Bradsher published in the New York Times on 8th March 2011 and

marked as “**Exhibit-Z-13**” which contain details of the cleanup activities carried out by Mitsubishi Chemical in the Bukit Merah plant.

24. The Board ought to have given strong weight to the terrible consequences suffered by the people of Bukit Merah which is still continuing despite the fact that the plant was closed some 20 years ago. Dr. T Jayabalan, a doctor, had issued a report on the survey he did in that area in the aftermath of the closure of the Bukit Merah plant. Now produced and shown to me and marked as “**Exhibit-Z-14**” is a copy of an article published in the Sunday Star issue of 13th June 2010 commenting the very long lasting after-effect of the radioactive waste caused by the ARE in Bukit Merah. This article also refers to the adverse effect on the health of residents there, as well as the environment.
25. We submit that the Board’s failure to take into account or in not sufficiently giving due weight to ARE’s failure to properly deal with thorium hydroxide caused by the rare earth industry in Malaysia when considering the application by Lynas for a TOL in Gebeng renders its decision invalid in law.

G. RECENT ENVIRONMENTAL DISASTERS

26. The dropping of the atomic bomb in Hiroshima and Nagasaki in August 1945 showed the world for the very first time the horrors of nuclear warfare and radioactive waste. Thereafter, numerous environmental disasters of great scale and magnitude have occurred which have resulted in massive discharge of radioactive waste, and the resultant human suffering and environmental degradation. We refer to 3 disasters which occurred in the last 20 years, which we contend are relevant when considering the Lynas project.

(i) Bhopal

27. In 1984, a poisonous gas cloud escaped from the Union Carbide pesticide factory in Bhopal, India which killed about 4,000 residents living in a 30-mile vicinity. Health problems caused by the gas leak subsequently killed about 15,000 people. A BBC research in 2004 disclosed that the pollution still causes people to fall ill and die in that vicinity. Bhopal entered history as the worst industrial environmental disaster to ever have occurred. Now produced and shown to me and marked as ***Exhibit "Z-15"*** is a note on the Bhopal tragedy on the internet⁴ from which these facts are obtained.

(ii) Chernobyl

4

<http://www.lenntech.com/environmental-disasters.htm#ixzz1FqkNK>

28. In 1986 a massive explosion and fire occurred in one of the nuclear reactors of the Chernobyl nuclear power plant near Kiev, Ukraine which instantly killed 31 people. About 135,000 people living within a 30-km radius of the explosion were evacuated. Apparently more than 8,000 people have died by exposure to radiation during the first clean-up operation. Thousands of people have been diagnosed with radiation sickness. There has been a dramatic increase in the number of thyroid cancer and leukemia cases. Aggressive radioactive particles, like plutonium, cesium, iodine and strontium were released into the atmosphere by the accident. The high levels of radioactivity have been predicted to exist for several centuries. Now produced and shown to me and marked as ***Exhibit “Z-16”*** is a note on the Chernobyl tragedy on the internet⁵ from which these facts have been extracted.

(iii) Fukushima

29. In March 2011 following an earthquake and tsunami, the Fukushima nuclear disaster occurred in Japan which displaced 50,000 households after radiation leaked into the air, soil and sea. Significant amounts of radiation, including iodine and cesium, were observed in places distant from Fukushima, including

⁵

<http://www.lentech.com/environmental-disasters.htm#ixzz1xwFqNK>

New York, Montreal and Austria. Large amounts of radioactive isotopes have also been released into the Pacific Ocean. Radioactive material was detected in a range of produce, including spinach, tea leaves, milk, fish and beef, up to 200 miles from the nuclear plants. As at February 2012 the plant is still leaking radiation and areas surrounding it could remain uninhabitable for decades due to high radiation. Significant amounts of radioactive material have also been released into ground and ocean waters. Now produced and shown to me and marked as ***Exhibit “Z-17”*** is a note on the Fukushima disaster on the internet⁶, from which these facts have been extracted.

(iv) Relevant Considerations

30. We accept that the radioactive waste that would be discharged if the LAMP site commences operations may be different from the waste that scarred the environment in Bhopal, Chernobyl and Fukushima. We also agree that these disasters may have been caused by features which may not be present in the LAMP site. Likewise, the intensity and concentration of radioactivity would be lesser in the LAMP site. Nonetheless, we are concerned that the lives and health of our families, our neighbours and the residents in Greater Kuantan — that is, a radius of 30 miles within the LAMP site — require in law the highest safety

⁶

http://en.wikipedia.org/wiki/Radiation_effects_from_Fukushima_Daiichi_nuclear_disaster

standards, with no tolerance for error or guesswork. In processing the TOL application made by Lynas, we submit that the Board is required in law to inquire whether the safety standards relating to the permanent disposal of radioactive waste by Lynas takes into account the lessons learnt by the scientific community and other experts after the disasters in Bhopal, Chernobyl and Fukushima. We are advised by our solicitors and verily believe that failure to consider these accidents would render the decision void.

H. RADIOACTIVE WASTE

31. As stated in Paragraph 10 (vi) above, if operations begin in the LAMP site, waste will be created. We are advised by our lawyers and believe that under Malaysian law such waste would be regarded as "*radioactive waste*". It is accepted by the science community that such radioactive waste can be hazardous to life and health of persons living near the LAMP site, and to staff who work there. Accordingly, it is of critical importance to inquire how Lynas proposes to manage, store or dispose of the radioactive waste, both on an immediate and permanent basis.

32. I am advised by my lawyers and believe that some of the expressions used in the EQA and AELA are

relevant to the instant dispute. Thus, Section 2 of the EQA, contains the following definitions:-

“environment” means the physical factors of the surroundings of human beings including land, water, atmosphere, climate, sound, odour, taste, the biological factors of animals and plants and the social factor of aesthetics

“pollution” means any direct or indirect alteration of the physical, thermal, chemical, or biological properties of any part of the environment by discharging, emitting, or depositing environmentally hazardous substances, pollutants or wastes so as to affect any beneficial use adversely, to cause a condition which is hazardous or potentially hazardous to public health, safety, or welfare, or to animals, birds, wildlife, fish or aquatic life, or to plants or to cause a contravention of any condition, limitation or restriction to which a licence under this Act is subject;

“waste” means includes any matter prescribed to be scheduled waste, or any matter whether in a solid, semi-solid or liquid form, or in the form of gas or vapour which is emitted, discharged or deposited in the environment in such volume, composition or manner as to cause pollution.

33. The word “environment” is given the same meaning in AELA as defined in the EQA. Section 2 of the AELA define these terms :-

‘radioactive material’ means means any nuclear fuel, radioactive product or radioactive waste;

‘radioactive waste’ means any waste which consists wholly or partly of-

- (a) a substance or article which if it were not waste would be radioactive material; or
- (b) a substance or article which has been contaminated in the course of the production, storage or use of any radioactive material, nuclear material or prescribed

substance or by contract with or proximity to any other waste within the meaning of paragraph (a) of this definition;

”

34. In support of its application for a TOL Lynas submitted a Radioactive Waste Management Plan dated 31st December 2011, a copy of which is now produced and shown to me and marked as ***Exhibit “Z-18”***. A review of this Plan would indicate that Lynas prefers to use the word “*residue*” for “*waste*”. It also has no plan for a permanent disposal facility to deal with the waste. Hence, at the time of its TOL application, Lynas had no specific proposal on how it intended to store or discharge the radioactive waste on a permanent basis.

35. The Radioactive Waste Management Plan submitted by Lynas also contain matters relevant to the instant dispute, including the following passages :-

“Radioactive Waste Management Plan

(pg 1)

While this document is termed as a Radioactive Waste Management Plan, Lynas considers the process waste generated from the LAMP operation to be “residues” as these waste streams can be reprocessed and commercialized in a variety of applications.

(pg 2)

As a result of the process, the three major residue streams generated and their respective total activity concentration are Flue Gas Desulfurization residue (FGD), Neutralization underflow residue (NUF) and Water leach Purification residue (WLP).

*Based on the waste classification system provided under the **Atomic Energy Licensing (Radioactive Waste Management) Regulations**, 2011, the FGD and NUF can be classified as cleared waste.*

(pg 3)

*In the event the FGD and NUF residue streams are removed from the control of the Board, then these residue streams will no longer be regulated under the Act 304 which is enforced by the AELB. Once removed from the purview of the AELB, these residue streams may be potentially be governed under the **Environmental Quality Act**, 1974 and its subsidiary regulations enforced by the Department of Environment, Ministry of Natural Resources and Environment. Specifically, the FGD and NUF, may potentially be classified as scheduled wastes under Schedule 1 of the **Environmental Quality (Scheduled Waste) Regulations**, 2005. However, the final classification of the FGD and NUF will be confirmed once the LAMP is operational and representative samples of the actual residues are collected and subjected to laboratory analysis to determine the total activity concentrate. If these two residue stream are classified as non-scheduled wastes, they will be commercialized (reused and recycled) in various applications. Any remaining FGD and NUF can be disposed safely in a secure municipal landfill.*

The WLP residue is defined as waste that does not necessarily meet the criteria of exempted waste, but that does not need a high level of containment and isolation and therefore, is suitable for disposal in near surface landfill type facilities with limited regulatory control. Such landfill type facilities may also contain other hazardous waste.

(pg 4)

During the operational life of the plant, an onsite residue storage facility (RSF) will be constructed for the storage of the FGD, NUF and WLP. The residues which will be generated in a paste form (moist filter cake) will be transported by trucks to engineered storage cells (collectively known as the RSF).

Upon plant closure after 20 years, any remaining residue within the RSF will be transported off site to a permanent disposal facility (PDF) for long term storage. At the time of report preparation (December 2011), the proposed site for the PDF had not been identified.

The design storage capacity for the RSF is approximately five years for each of the respective residue streams, namely the FGD, NUF and WLP. The RSFs will be constructed in two phases, the RSFs will be constructed to cater for an additional 3.5 years worth

of storage capacity. The total LAMP capacity available at the LAMP site is 5 years.

(pg 5)

In the unlikely event that the FGD and NUF are not able to be commercialized, these residue streams will be stored onsite within the RSF. As the maximum design storage capacity of the RSF is approached, the radioactive residue (FSD, NUF and WLP) will be removed from the site in campaigns to the PDF approved by AELB. Lynas proposed to initiate the site selection exercise for the PDF after 2 years of operation or earlier, as deemed necessary. Offsite transportation of the residues shall subject to the necessary licensing requirements imposed by the regulatory bodies.

Residue management procedures which include handling, transport, onsite storage within the RSFs have been developed by Lynas and these procedures will be implemented by Lynas when LAMP is operational.

(pg 6 & 7)

Based on prevailing regulatory requirement in Malaysia, any faculty, which is directly or indirectly involved in the use or production of radioactive materials unless otherwise excerpted, comes under the purview of Atomic Energy Licensing Board (AELB) and subject to the provisions of Atomic Licensing Act 1984 (Act 304) and its subsidiary legislations. Under the Radiation Protection Regulation 1986 of Act 304, facilities involved in the milling of materials containing or associated onto radioactive substances shall be licensed by the AELB under Class A Milling License.

The team recommended specific actions items, one of which is to develop and submit a long term waste management plan (WMP) to the AELB prior to the commencement of operations. The WMP shall periphraes on mix of one of the LAMP's process streams, ie: the water leach purification (WLP) solid and described est. mix strategy after the cessation of the LAMP operations and plant closure.

While this document is termed as a Radioactive Waste Mix Plan, Lynas considers the process waste generated from the LAMP operator to be 'residues' as these waste streams can be reprocessed and commercialized in a variety of application. The term 'waste' is not preferred at the stage as it denotes an end product in materials suitable only for disposal after all avenues for reuse and reprocess have

been exhausted. Therefore, the term residue is used throughout this document to refer to the LAMP's process residue.

(pg 9)

The scope of this RWMP is limited to the management of radiological residues arising from the LAMP operations. The Management of Radioactive Residue generated from decommissioning activities of the LAMP upon cessation of operations after 20 years are discussed are not within the scope of this RWMP but presented in a separate document entitled "Decommissioning Plan".

(pg 12)

In Malaysia, 2 Ministries are responsible for matters pertaining to the Radioactive Materials ie. The Ministry of Science, Technology and the Innovation (MOSTI) and the Ministry of Health (MoH). Under MOSTI, the AELB is the regulatory body and its primary functions are to exercise control and supervision over production, application and usage of radioactive material or atomic energy.

*Under the provisions of the **Radiation Protection (Licensing) Regulations** 1986 of Act 304, facilities involved in the milling of materials containing or associated with radioactive substances shall be licensed by the AELB under Class A Milling License.*

For onsite storage and disposal of the radioactive waste, the Class G license is required.

(pg 13 & 14)

The newly promulgated Atomic Energy Licensing (Radioactive Waste Management) Regulations, 2011 which came into force on 16th August 2011 applies to all aspects of radioactive waste and waste management arising from medical, industrial and research application or any other application specified by the board. The Regulations comprises 15 sections which include amongst others: (i) Discharge and Disposal of Radioactive waste and (ii) Management of Radioactive waste.

Specifically, Lynas is obliged to comply with the provisions of the regulations which include the appointment of a waste management officer prior to commencement of operations.

(pg 16)

As part of the company's residue management strategy, Lynas intends to submit an application for the removal of the selected residue streams from the control of the AELB due to their low radioactivity.

(pg 17)

The management of non radioactive scheduled waste (hazardous) in Malaysia is governed under the EQA 1974 enforced by the Department of Environment under the Ministry of Natural Resources and Environment (MNRE). Specifically, the Environmental Quality (Scheduled Wastes) Regulation 2005 regulates the responsibilities and procedures related to storage, handling and disposal of scheduled wastes.

(pg 18)

Lynas Corp. is committed to follow all Malaysian Laws and Regulations that are applicable to the processing and compliance with international standards and guidelines.

(pg 30)

The Waste Water Treatment Plant (WWTP) to be operated at the LAMP site employs biotreatment process designed primarily to reduce COD and BOD in all the waste water stream from the plant and to produce water complying with the standard B limits of the Environmental Quality (Industrial Effluent) Regulation 2009. The WWTP treatment process will involve neutralization, BOD/COD reduction, settling and clarification. The treated waste water will be discharged into unlined earth drain which flows into Sungai Balok.

The RIA prepared for the LAMP has concluded that the limit of 1Bq/L for radium 226 and 1 Bq/L for radium 228 will be exceeded in the treated effluent prior to discharge into Sungai Balok. Testwork carried out has concentration in treated effluent were below detection limit (<0.5 Bq/L).

(pg 31)

These waste will be stored in a dedicated scheduled waste storage building within the LAMP site.

(pg 34)

As previously mentioned, Lynas considers these three main residue streams as process residue and not waste based on very promising test results obtained over the past 4 years (since 2007). Details on the commercial viability of these residues are described in Section Six.

(pg 43)

3.4 Decommissioning Phase Waste Streams

Prior to plan closure, in accordance with Guidelines for the Decommissioning of Facilities Contaminated with Radioactive Materials, a detailed Commissioning Plan will be developed to address the management of radioactive residue and contaminated equipment and facilities. If applications for the residues cannot be successfully commercialized, any remaining residue that has not been consumed in commercial applications will be removed and disposed in a dedicated PDF.

(pg 47)

In complying with the IAEA concept, the overall strategy adopted by Lynas for the management of the 3 main residue streams (FGD, NUF and WLP) is to:

- *continuously improve the process using the best available technology to reduce the residue generation at the source;*
- *actively conduct research for the reuse application for the residue as SMPs. This is aimed at minimizing the quantity of residue to be temporarily stored within the RSFs and thereafter at the offsite PDF for permanent disposal; and*
- *undertake safe disposal of any remaining residues which cannot be successfully commercialized.*

(pg 49)

5.2.3 Residue Disposal

In the event Lynas has exhausted all measures for the reuse and reprocessing of the residue streams, and there are remaining residue which cannot be fully

commercialized, Lynas will require a suitable plot of land within the State of Pahang for the construction of a PDF. This is to for safe management and disposal of the radioactive residues over a period of 300 years under institutional control.

(pg 55)

If the application to commercialize FGD and NUF is not approved, Lynas will apply to Department of Environment for disposal of the residues at a secure municipal landfill. If such method of disposal is rejected, other disposal options will be evaluated including disposal of the residues at a secure hazardous waste facility or within the PDF.

(pg 57)

In the event the application to convert WLP residues to form products is rejected, the WLP will be stored on site and thereafter transported to the PDF for disposal.

Similarly, any remaining residue that cannot be totally utilized in other applications, will be disposed at the PDF.

(pg 60)

Assuming a worst-case scenario that the WLP cannot be utilized, the PDF will be designed to cater for all WLP residue generated over the operational lifetime of the LAMP.

The PDF shall be subjected to an RIA and a Safety Case and Safety Assessment; and the necessary approvals from the relevant government agencies including the AELB, DoE, Local Authority shall be obtained.

(pg 80)

7.2.3 Conceptual Design of Permanent Disposal Facility (PDF)

The principal design objective for the proposed PDF is to provide for isolation of the WLP residues from environmental resources, namely soil and ground water. The PDF will be designed for environmentally and

geotechnically acceptance long-term permanent storage of the WLP residue streams and to keep these residues isolated from the environment.

The proposed PDF design compromises several smaller disposal cells and configuration shall be dependent on shape and size of the selected location. Details of the design considerations are described in the Safety Case for Radioactive Waste Disposal.

7.2.4 Safety Assessment of the PDF

Once the location of the PDF site has been identified and a detailed engineering has been completed for the PDF, a supplementary safety assessment, including optimization of protection, will be performed.”

[our emphasis]

36. The failure of Lynas to submit a comprehensive waste management plan which deals with the critical issue of the permanent disposal of radioactive waste which would be created in the LAMP site renders the decision void in law. Further, Lynas’s plan is contrary to the official position of the Government of Malaysia (the ultimate employer of both the Board and the **DG**). Thus, another agency of the Government of Malaysia, the Ministry of International Trade & Industry (“MITI”) in its official portal issued a statement on 12th July 2011 which “*inter alia*” states:-

“The Lynas Fact Sheet,

***Official Portal of Ministry of International Trade and Industry
Malaysia***

Also can be access by http://www.miti.gov.my/cms/content.jsp?id=com.tms.cms.article.Article_4008ad57-c0a81573-7a607a60-19ec542e

12th July 2011

The Lynas Project

1. ***“At Gebeng, the Lynas plant will extract rare earth minerals from the ore. Most of this will be for export. Lynas says waste (residue) from the refinery will be used to make products which will be made safe and can be sold commercially, or stored in safe and secure containers in specially prepared sites”.***

[page 2]

Main Findings and Recommendations of IAEA Review Mission-Summary

- ***Lynas must submit waste management plan for approval***

The IAEA said Lynas must submit – before the start of operations – a comprehensive waste management plan for AELB’s approval.

The plan should address the following issues:

- o ***How waste will be stored or disposed off***
- o ***What will happen when the project ends and the plant is dismantled***
- o ***How the environment will be restored to normal use at the end of the project life***

[page 4]

Government’s Position

2. ***Lynas must meet all safety conditions recommended by the IAEA. This includes submitting a comprehensive plan on waste management which has to receive AELB’s approval before the start of any operations.***
3. ***Until this is done:***

No further licensing approval for Lynas will be considered

No importation of raw materials by Lynas will be permitted

No operational activity will be allowed at the Lynas site.

4. *This includes undertaking monitoring and enforcement measures to protect public health and safety.*
5. ***Public safety remains the Government's highest priority and overrides all other considerations.***

[page 5]

[our emphasis]

A copy of the said Statement by MITI found in the "Lynas Info Pack" is shown at Exhibit Z-7 referred to in paragraph 10 above.

37. On 16th January 2012, Malaysian Insider published an article containing a statement by the Managing Director of Lynas Malaysia, Mashad Ahmad, that a permanent depository facility is only needed in a "*worse-case scenario*" where Lynas is unable to reprocess the waste into a commercial product, and in such an event "*we have 17 years before we even need to identify where is the PDF*". Now produced and shown to me and marked as ***Exhibit "Z-19"*** is a print all of the said article entitled "Lynas Paints 'Worst-Case Scenario' for toxic waste". We contend that the cavalier approach adopted by Lynas to the permanent disposal of radioactive waste in the LAMP site, which even the IAEA and the Government of Malaysia regard as vital

before operations can begin, is in breach of the regulatory requirements imposed by the AELA and EQA.

I. SOCIO-ECONOMIC AND ENVIRONMENTAL CONCERNS

38. In addition to the discharge of radioactive waste if the LAMP site becomes operational, other relevant factors ought to have been considered by the Board when it was processing the application by Lynas for a TOL. They include the impact of such a plant on the wider community living and working within a radius of about 30 km, that is, Greater Kuantan, the impact on the rivers which flow into the South China Sea, the impact on the fishing industry, the impact on agriculture, including fruit trees grown by the residents, the impact of the very high rainfall in a tropical monsoon climate which distinguishes Malaysia from China and Australia which are much drier, and the like.

39. Perhaps the best description of the LAMP site is found in a document prepared on behalf of Lynas, and submitted to the Board. A Preliminary Environmental Impact Assessment and Quantitative Risk Assessment was undertaken in January 2008 by Environ Consulting Services (M) Sdn Bhd

(“**Environ**”) on behalf of Lynas Malaysia Sdn Bhd. Now produced and shown to me and marked as **Exhibit “Z-20”** is a copy of volume 1 of the same containing Environ’s Risk Assessment. We would like to highlight the following passages from this Risk Assessment.

(a) **“1.1 Project Overview**

The plant will process up to 80,000 tonnes per annum (tpa) wet weigh basis of lanthanide concentrate (equivalent to 65,000 tpa dry weight basis) and produce 22,500 tpa (LnO or lanthanide oxide basis) of high purity lanthanide compounds in the form of a suite of six different products.”

(pg 169)

(b) **“1.3 Legal Requirement**

In the promotion of environmentally sustainable development, the Government of Malaysia has established the necessary legal and institutional requirements to ensure that environmental factors are deliberated during the early stages of project planning.

Section 34A of the Environmental Quality Act 1974 (and its Amendments) requires any person intending to carry out a prescribed activity to submit a report on the impact on the environment to the Director General of the Department of Environmental (DOE) for examination. The Environmental Quality (Prescribed Activities) (Environmental Impact Assessment) Order 1987 lists 19 Prescribed Activities that warrant the submission of an EIA to the Director General of the Environmental for approval.

The proposed activity falls under Prescribed Activity 11(b): Ore processing, including concentrating for aluminium, copper, gold or tantalum of the Regulations.

The lanthanide concentrate exhibits a low level of naturally occurring radiation is classified as a radioactive substance under the Atomic Energy Licensing Act, 1984 and therefore the operation of the plant requires a Class A Milling

License from the AELB in accordance to the requirements of the Act.”

(pg 169)

(c) “1.6.3 Proposed Advanced Materials Plant in Malaysia

The resultant product of the concentration process is the lanthanide concentrate and will be transported to Port, some 1000 km south of Mt. Weld for shipping to Port of Kuantan, Pahang, Malaysia.

From the Port of Kuantan, the concentrate will be transported to the proposed plant site within the GIE which lies about 3 km northwest of the port.”

(pg 173)

(d) “b. Export Revenue- Foreign Exchange Earnings

The export revenue from the high purity lanthanide products from the Advanced Materials Plant is projected to be RM9.5 billion over the first 15 years.”

(pg175)

(e) “2.4.1 Concentration Plant (Mt Weld, Western Australia)

Approximately 66,000 tonnes of lanthanide concentrate at < 20% moisture content will be shipped annually from the Port of Fremantle in Western Australia to the Eastern Wharf of the Port of Kuantan in Pahang. This quantity will be shipped weekly via 60 to sea containers movements per week.

The sea containers will be loaded onto trucks and delivered to the advanced plant site within the Gebeng Industrial Estate which is located about 3 km west of the port. On an average, the transportation frequency is expected to be 6 days per week 13 deliveries per day.”

(pg 183)

(f) “2.4.5 Utilities

Process Water Requirement

*The process water requirement for the Advanced Materials Plant is expected to range between 330 m³/hr and 550 m³/hr under steady state demand. **The plant will source the water from the Pahang Water Supply Department.***

All waste streams generated from the Advanced Materials Plant will be either recycled within the process or treated in a wastewater treatment system prior to discharge. The final treated effluent will be discharge from the plant at a rate of between 330 m³/hr and 550 m³/hr."

(pg 188)

(g) **"3.2 Site Selection**

***The decision to locate the plant outside Australia was solely based on economic considerations.** Despite receiving environmental approvals in Australia, the isolated location of the mine site (in Laverton, Western Australia) **resulted in significantly higher capital costs for plant and infrastructure construction, which were deemed prohibitive.** The operational costs associated with an isolated location, such as the cost of shipping reagents and transporting labour force (by air) was extremely high."*

(pg 190)

(h) **"3.4.1 Build-Out Options**

*The potential concerns arising from the implementation of the project involve environmental issues. **In the event adequate mitigation measures are not incorporated in the design and operation of the plant, the following potential environmental impacts are envisaged:***

- ***Degradation of the Sg. Balok river water quality:** As the proposed plant site is not within a potable water catchment area, all discharges arising from the plant will be required to comply with the less stringent Standard B discharge limits as required under the Environmental Quality (Sewage and Industrial Effluent) Regulations, 1978. **Based on the plant design, treated effluent from the wastewater treatment plant will be discharged into the stormwater retention pond on the plant site. From***

*the pond, the combined discharge will flow out into the external earth drain which runs along the southern boundary of the site in a westerly direction into Sg. Balok. This discharge will increase the pollutant loading in the river system. If the Standard B limits are significantly breached the carrying capacity of the river will be affected. **Increased organic, suspended solids and chemical loading of the river will result in adverse impacts to the general health of the river body.** These impacts can be minimized by ensuring effective wastewater treatment technological options are given due consideration during the design phase."*

(pg 192)

- (i) **"Potential Soil and Groundwater Contamination:** The Operation of the plant will result in the generation of three major residue streams, namely the Water Leach Purification Residue (WLP) from the cracking and separation process, the Flue Gas Desulphurisation Residue (FGD) from the waste gas treatment system (scrubber) and the Neutralisation Underflow Solids from the wastewater treatment process (NUF). **These waste streams have been classified as radiological waste by the Atomic Energy Licensing Board (AELB) and thus will be handled and stored in accordance to the requirements of the Board. Lynas proposes to segregate and temporarily store these wastes within engineered residue cells constructed within the plant site.** The design of these cells will be developed by Lynas and the EPCM Contractor Ranhill Worley-Parsons in conjunction with the recommendations of the Malaysian Nuclear Agency (MNA) which are based on the agency's Radiological Impact Assessment carried out for the project. **Storage of these residues within the site may be a potential source of soil and groundwater contamination in the event of loss of integrity of the residue storage cells and, inadequate provision of soil and groundwater protection measures."**

(pg 193)

- (j) ***“Storage of Hazardous Materials:*** Potential for contamination of land and water resources exists due to the bulk storage of hazardous reagents including concentrated acids. In mitigating such events, contamination measures for such substances must be in place. These measures should be designed to contain the spill and leaks, preventing them from escaping into the environment under normal operating conditions.”

(pg 193)

- (k) **“4.2.4 Water Resources**

The GIE where the proposed plant site is to be located was formerly part of the Paya Tanah Merah peat swamp forest. Subsequently, when the GIE was developed, the area was reclaimed using fill quarried from the nearby hilly areas. The two main rivers that drain the GIE are Sungai Balok and Sungai Tunggak. Sg. Balok originates as Sungai Batang Panjang from the hills to the northwest of GIE and generally serves the western catchment of the GIE. Sungai Tunggak originates from the Tanah Merah peat swamp forest and flows south along the eastern boundary of the GIE, which generally drains the areas within the eastern sector of the site (Exhibit 4.7). The site is within the Sungai Balok catchment.

Sungai Balok flows along the western boundary of the GIE in a southerly direction before its confluence into the coastal waters of the South China Sea. The primary source of pollution into this river is the drainage discharge from the GIE at two locations along the river channel.”

(pg 196)

- (l) **“4.3 Climate and Meteorology**

The climate of Malaysia is equatorial characterized by fairly high but uniform temperature, high humidity and copious rainfall throughout the year with little seasonal variation.”

(pg 197)

(m) **“4.3.4 Rainfall**

The average annual rainfall recorded at the station over the period 1951-2007 is 2,958mm with an average of 189 rainy days annually. The highest annual rainfall was recorded in 1967 at 4,268.”

(pg 197)

(n) **“4.5 Human Environment**

Residential settlements in the vicinity of the GIE are primarily located along the existing road network.

The nearest human settlements to the project site are Taman Balok Perdana and Taman Balok Makmur which is located about 3km south of the site along the Kuantan-Pelabuhan Bypass road.

Based on statistical data obtained during the most recent population census in 2000 by the Department of Statistics Malaysia, the total population count for Taman Balok Perdana, Taman Balok Makmur and Kem TLDM Kampung Seberang Balok is 5,973.

Other settlements neighbouring the site are Kampung Sungai Ular (2.5km north of Kampung Gebeng), Kampung Hulu Balok (3km south-east of the site), Kampung Berahi (4.5km south of the site), Kampung Seberang Balok (6km south of the site).”

(pg 200)

(o) **“4.8 Socio-Economic Environment**

The Lynas project site will be discharging its effluent into a drain that leads into Sungai Balok. According to the Department of Fisheries (Kuantan branch), there are fishing villages at Sungai Balok, particularly at the river mouth leading into the South China Sea. Apparently, these fishermen are 100% dependent on the sea, and not dependent on Sungai Balok. Sungai Balok in itself is occasionally used by anglers who fish during their pass time or as a hobby.”

J. REGULATORY REGIME

40. My solicitors advise me, and I verily believe, that a Class A Licence under Regulations 4 and 23 of the RPL Regulations made under AELA comprises three parts, namely,:-

- (i) the siting part;
- (ii) the construction part; and
- (iii) the operation part, which , in turn, is divided into two “stages”:-

- (a) the temporary operation stage, where a Temporary Operating Licence (**TOL**) is issued, where restricted operation of the LAMP would be allowed “for the purpose of confirming [its] expected normal operating characteristics and predicted by the design information” [reg 2 (definition of “temporary operation stage”) of the RPL Regulations]; and
- (b) the full operation stage, where a Full Operating Licence (**FOL**) is issued.

41. My solicitors advise me, and I verily believe, that :

- (i) each of these parts and stages of the Class A licence requires a separate approval from the Board, and that an increasing number of conditions must be fulfilled before each licence is issued, as provided in Regulation 23, and
- (ii) that not just one Class A licence is issued but a separate form of “licence” must be issued under Regulation 16 in the Form shown in the Sixth Schedule of the RPL Regulations for each of the parts or stages i.e. the siting and construction parts, the temporary operations stage and the full operation stage.

42. Further, my solicitors advise me, and I verily believe, that apart from the issuance of licences by the Board, all activities which have a potential impact on the environment are subject to the overriding provisions of the EQA. I am thus advised by our solicitors and verily believe that:

- (i) Pursuant to Section 34A of the EQA, any person intending to carry out Prescribed Activities (as defined under the EQA) is required to submit a Environmental Impact Assessment Report (**EIA**) to the DG before any approval for the carrying out of such activities is

granted by the relevant approval authority, in these case, the Board;

- (ii) The Prescribed Activities requiring an EIA are set out in the Environmental Quality (Prescribed Activities) (Environmental Impact Assessment) Order 1987 [P.U. (A) 362/87] (**EQA Order**) and include “Ore processing” [Item 11(b)] and the construction of a “secure landfill site” or a “storage facility (off site)” for toxic or hazardous wastes [Item 18(a)(iv) and (v)]. Lynas accept that their business activities in Malaysia would be deemed Prescribed Activities under Section 34A of the EQA;
- (iii) Section 34A of the EQA provides that the EIA that is submitted shall conform to “guidelines prescribed” by the DG. Those guidelines set out two types of EIAs: a Preliminary EIA and a Detailed EIA
- (iv) A Detailed EIA is a procedure undertaken for projects with major / significant impact to the environment and is far more stringent and complex than a Preliminary EIA.
- (v) Now produced and shown to me and marked as ***Exhibit “Z-21”*** is an extract from the website of the

Department of Environment entitled “EIA: General Information”⁷ which “*inter alia*” explains the differences between the process of submitting and approving a Preliminary EIA and a Detailed EIA.

- (vi) Now produced and shown to me and marked as ***Exhibit “Z-22”*** is a copy of the List of Prescribed Activities Requiring a Detailed EIA also obtained from the same website, which shows that as at 20.06.2011 the DG requires any “*Prescribed activity using radioactive material(s) and generating radioactive waste(s)*” to go through a Detailed EIA process; and
- (vii) The proposed processing of rare earth elements in the LAMP site are activities which come under this category. Hence, a Detailed EIA report is mandatory under the law.

43. Our solicitors advise me, and I verily believe, that pursuant to Section 34A of the EQA and the prescribed guidelines thereunder, Lynas Malaysia is required by law to comply with the following procedure in order to secure Detailed EIA:-

- (i) Lynas must submit a proposed Terms of Reference to the DG, who through its Technical Committee may

approve those Terms of Reference, but subject to the imposition of conditions;

- (ii) Thereafter, a Detailed EIA must be prepared by a Consultant appointed by Lynas and approved by the DG. Ordinarily, a Detailed EIA would also require a detailed report setting out the health and safety impact of the project on workers and on members of surrounding communities generally, called a Health Impact Assessment Report;
- (iii) The Detailed EIA must then be subjected to a detailed Public Consultation stage, where a Committee must receive all comments made by members of the public and report on them to the DG;
- (iv) Next, the DG personally is required to approve the Detailed EIA (as opposed to the State Director of Environment who approves a Preliminary EIA);
- (v) If the Detailed EIA is approved, or approved with conditions, or is rejected, the DG is required to notify the Board of that decision; and
- (vi) Finally, the Board must comply with the DG's decision, and cannot approve any licence under the AELA or

Regulations made thereunder unless the project complied with the DG's approval of the Detailed EIA.

43. I am advised by our solicitors and verily believe that the failure of Lynas to go through this complex statutory regime results in the decision being ultra vires the ALEA and the EIQ.

K. APPLICATION FOR TOL FOR THE LAMP SITE

44. We believe that Lynas had in July 2010 applied for a TOL and again on 30th December 2011. Lynas's application for a TOL was approved by the Board at its meeting on 30th January 2012, subject to certain conditions.
45. After a team of experts from the International Atomic Energy Agency (IAEA) arrived in Malaysia in May 2011 to review the LAMP site these documents were released :-
- (i) The IAEA released its Peer Review report entitled "Report on the Radiation Safety Aspects of a Proposed Rare Earths Processing Facility (the Lynas Project)" dated 29.05.2011 – 03.06.2011 (**the IAEA Report**), a copy of which is now produced and shown to me and marked as ***Exhibit "Z-23"***; and

- (ii) In response, a Report entitled “Comments on the Peer Review Report on the Radiation Safety Aspects of a Proposed Rare Earths Processing Facility (the Lynas Project)” was prepared by an independent chemical engineer Dr Lee Chee Hong, a copy is now produced and shown to me and marked as ***Exhibit “Z-24”***;

46. It was on 20th June 2011, shortly after the circulation of the IAEA Report, that the DG amended the prescribed guidelines under the EQA to include “*Prescribed activity using radioactive material(s) and generating radioactive waste(s)*” as an activity that required a Detailed EIA. This was made clear by a statement made by the Member of Parliament for Kuantan, YB Fuziah Salleh, reported in the media. Now produced and shown to me and marked as ***Exhibit “Z-25”*** is a copy of a news report referring to her statement.

47. No Detailed EIA duly approved by the DG was presented to the Board when the latter was considering the application by Lynas for a TOL, which my solicitors advise me (and which I verily believe) is contrary to Section 34A of the EQA. In consequence the decision is void in law. It should be noted that:-

- (i) a Detailed EIA did not form part of the documents that were put up for public viewing;

- (ii) no advertisement has been published referring to a public consultation on a Detailed EIA for the LAMP site;
- (iii) our solicitors by their letter dated 27th January 2012, wrote to the Board inquiring if there is a Detailed EIA, and requiring confirmation that the TOL will not be issued until a Detailed EIA is approved by the DG. ;
- (iv) the AELB did not immediately reply to this letter, but instead made the public statement on 1st February 2012 shown in Exhibit Z-3 saying that the TOL had been approved;
- (v) on 3rd February 2012, our solicitors received a letter in response from AELB effectively stating that it consider the requirement to provide a Detailed EIA not within the scope of their departmental responsibilities;
- (vi) on 8th February 2012, our solicitors replied AELB's letter, disputing its statement and asking AELB not to issue the TOL or if already issued, to cancel or suspend the TOL until this Honourable Court has heard and determined our objections. That letter was also copied to the DG and Lynas. To date, AELB has

not responded to our solicitors' letter dated 8th February 2012;

- (vii) On 10th February 2012, our solicitors received a letter from solicitors for Lynas asking that all cause papers and communications are copied to them;
- (viii) On 15th February 2012, our solicitors wrote to the DG asking the DG to advise the AELB that their approval of the TOL was against the law and to take necessary steps under the EQA to stop Lynas from proceeding to operate LAMP until the hearing and disposal of this application. To date, the DG has not responded to our solicitors' letter dated 15th February 2012.

Now produced and shown to me and marked collectively as ***Exhibit "Z-26"*** is the series of letters referred to in subparagraphs (iii) to (viii) above.

L. PUBLIC VIEWING OF LYNAS DOCUMENTS

- 48. We believe that as a result of the public outcry against the LAMP site, the Board agreed to allow 2 documents to be viewed by members of the public.

49. Nonetheless, the so called public display of these documents was a sham because it did not give a meaningful or practical opportunity for any consultation. Now produced and shown to me and marked as **Exhibit “Z-27”** is a copy of an open letter sent by the Stop Lynas Coalition and the Save Malaysia – Stop Lynas groups objecting to the procedure adopted by the Board, and requesting for a proper public consultation.
50. In addition, the decision of the Board seems pre-determined because it granted the TOL to Lynas in only 1 working day, Friday 27th January 2012, that is, between the end of the period for submissions of comments from the public and its Board meeting whereat the decision was made. From 3rd January 2012 until 26th January 2012, 1,123 comments were received. How it was possible for these large number of comments to have been considered and a decision made in one day defies credibility. This is especially given that AELB’s executive secretary is quoted to have said earlier that AELB needs more than one week to review the reports drawn up by AELB’s special technical committee and a public consultative committee. He is also quoted to have said “it’s possible that the decision may be postponed to our next Board meeting in March or perhaps before that. But I don’t want to specify a date because we cannot rush this process.”

Now produced and shown to me and marked as ***Exhibit “Z-28”*** are a copy of the news article entitled “*Decision On Lynas’ Licence May Be Postponed*” from the Free Malaysia Today website posted on 12th January 2012 together with some of the criticisms made by various persons on the procedure adopted by the Board with regard to public view.

51. Further, during the public viewing exercise:

- (i) copies of the relevant documents were not given to members of the public to enable them to study the documents thoroughly and carefully;
- (ii) there were approximately 300 pages of documents, but each person was only allowed to inspect the documents for one hour (later extended to three hours) and were not allowed to take photographs of the documents; and
- (iii) nevertheless with great difficulty, members of both associations persevered, and copied by hand line by line all the documents and then retyped them. The Radioactive Waste Management Plan dated 31st December 2011 is exhibited as Exhibit Z-18 in this affidavit. Now produced and shown to me and marked

as **Exhibit “Z-29”** is a copy of the “Safety Case” document. Both these documents are copies of the documents that were made available during the public viewing, and which are the product of this copying and retyping exercise.

52. We are advised by our solicitors and verily believe that if the public viewing of documents was intended to be an exercise in public consultation it was conducted in breach of the rules of natural justice in that the persons objecting to the project were never given a proper and meaningful opportunity to put forward their objections after having proper and meaningful opportunity of studying the documents in support of the Lynas application.

M. WHY IS A DETAILED EIA REQUIRED?

53. If the LAMP site begins operation, Malaysia would effectively become a dumping ground for radioactive waste for ore mined in Australia and transported here. Malaysia cannot export such waste to Australia, or indeed any other country. Hence, the waste would have to be managed, stored, and finally be disposed within Malaysia. Malaysia also cannot dump the waste in the High Seas. Now produced and shown to me and marked as **Exhibit “Z-30”** is a copy of an article published in the Malaysian Insider on 12th April

2011 quoting the West Australian Minister for Mines, Norman Moore, rejecting calls to take back the waste from Malaysia. He stated : -

“The Western Australian Government does not support the importation and storage of other countries radioactive waste.”

54. In July 2011, the Malaysia Medical Association (MMA) which represents the medical profession in Malaysia called for the scrapping of the Lynas project. Now produced and shown to me and marked as **Exhibit “Z-31”** is a copy of an article posted in Malaysia Insider on 20th July 2011. According to MMA’s President, Dr Mary Suma Cardosa, the MMA *“remain deeply concerned that public safety and health concerns have not been adequately met and could not be guaranteed, by whatever reassurances, that have been given”*. Substantial weight ought to have been given by the Board to expert medical opinion on health concerns arising from radioactive waste from the LAMP site.

55. There are very real and serious concerns that LAMP would pose a grave danger to the health and well-being of the Applicants, their families, their neighbours and all other residents of Pahang and Terengganu (if not the whole of Malaysia and Singapore) for generations to come. Now produced and shown to me and marked as **Exhibit “Z-32”** is a compilation of news reports, articles, press

statements, statements made in Parliament and other documents showing the debate surrounding the LAMP thus far amongst Malaysians and the grave concerns that are still not yet addressed.

56. As stated in paragraphs 20 to 25 above, the Bukit Merah incident is highly relevant in that:-:

- (i) Malaysia last experimented with rare earths in the Asian Rare Earths refinery in Bukit Merah operated by Mitsubishi Corporation of Japan which plant was shut down in 1992 after huge opposition for health and safety reasons;
- (ii) despite the shut-down 20 years ago, 8 people have suffered from leukemia (7 of whom died) in an area within a 5 km radius of the Bukit Merah plant in circumstances where there should only be 1 case every 30 years for a population of that size in the vicinity of the said plant; and
- (iii) the radioactive waste from that plant was recently dug out from its original burial site in Bukit Merah to be transported elsewhere and to there be reburied again because the disposal of the radioactive waste was not done properly on the first occasion.

57. Further, the following factors support our concerns that it is wholly necessary for a Detailed EIA to be carried out, and we and our advisers are given a proper opportunity to study the impact on the environment and on our health as a result of the LAMP site, and to put forward our reasons for not allowing it to operate:-

- (i) The difficulty with which information has been obtained from Lynas and the Board, the lack of transparency and the obstacles placed in our path to getting full information has lead to suspicion and mistrust. This mistrust has been found to be well placed with Lynas making public statements which are later found to be not accurate, and with Lynas then making correcting statements;
- (ii) The lack of a genuine public consultation process throughout the decision making process thus far by the Board means that it is not clear if all necessary matters, and relevant considerations have been taken into consideration by the Board, and whether irrelevant considerations were taken into account; and
- (iii) There has been no credible explanation as to why Malaysia has been chosen to process the rare earths

when Malaysia's own industries will not benefit from this plant.

58. The speed with which the AELB made its decision is even more incredible given the serious and relevant considerations raised in the public comments submitted to the AELB. Now produced and shown to me and marked as *Exhibits "Z-33" , "Z-34" and "Z-35"* respectively are the following objections by three eminent bodies / persons whose views should be taken seriously:-

- (i) the written submissions to AELB by the Consumers' Association of Penang and Sahabat Alam Malaysia dated 25th January 2012 entitled "Review of the Lynas documents "Radioactive Waste Management Plan" and "safety Case for Radioactive Wastes Disposal" ("CAP-SAM Submission");
- (ii) the Objections by the Pahang Bar Committee dated 18th January 2012 to the AELB; and
- (iii) the Feedback to AELB by the MP for Kuantan YB Fuziah Salleh dated 26th January 2012.

59. The CAP-SAM Submission amongst others, takes the following objections against the grant of a TOL to Lynas:-

- (i) The Atomic Energy Licensing (Radioactive Waste Management) Regulations 2011 [P.U.(A) 274/2011], under which Lynas Malaysia now seeks to classify the process waste generated from the LAMP operations to be “residues” and not “radioactive waste”, was only gazetted on 16th August 2011.
- (ii) These Regulations for the first time made provisions allowing for the reuse and recycling of radioactive material instead of it being classified as “radioactive waste”.
- (iii) The CAP-SAM Submission points out that these Regulations:

“are very general and actually give a licensee carte blanche to manage the radioactive wastes upon approval from AELB. It appears that this piece of legislation has been specifically crafted to meet Lynas needs and propitiously timed to allow Lynas to apply for the TOL thus facilitating Lynas to circumvent the problem of the storage of radioactive wastes which until today it has failed to provide a credible solution.

“Compared to the IAEA General Safety Guide, the new Malaysian P.U.(A) 274 Regulations do not clearly set limits or standards for exemption of radioactive waste based on radiation exposure that is allowed for individuals.”

- (iv) The CAP-SAM Submission highlights the fact that Lynas is making an assumption that the process waste generated from the LAMP operation can be reprocessed and commercialized, and it is on this assumption that it terms the waste “residues”. However, CAP-SAM point out that *“not all Lynas’ LAMP wastes can be reprocessed and commercialized” since Lynas’ own reports acknowledge that any such reprocessing is still at the research stage with the potential of not being successful.*
- (v) In addition, the CAP-SAM Submission points out that under the IAEA General Safety Guide, the upper limits of the radiation exposure mentioned in Lynas’ own Radiological Impact Assessment Report is much higher than the allowable limit set by the IAEA. As stated in the CAP-SAM Submission: *“We now have a situation where AELB has arbitrarily set its own safety standards for radiation exposure which is not in accordance with the international standards”.*
- (vi) The CAP-SAM Submission also highlights that AELB has not included “very low level waste” (VLLW) as a separate category in its classification of 5 categories

of radioactive wastes, although the latest IAEA General Safety Guideline (GSG-1) includes VLLW as a separate category. By not having VLLW as a separate category, AELB has subsumed VLLW into its Cleared Wastes category which does not need to be regulated. CAP-SAM points out that Lynas may try to classify their waste as Cleared Wastes not requiring regulation, which would otherwise fall under VLLW under international standards and be subject to regulation as a radioactive waste.

(vii) The CAP-SAM Submission also states:

“Despite reassurances from Lynas’ safety advisor Professor Ismail Bahari (former UKM radiology professor) that ‘it can dilute the Water Leach Purification wastes to below 1Bq/g to be used as a base in road building’, the volume of radioactive wastes generated makes it physically impossible to do so. Professor Ismail says that ‘if you mix the WLP with 10 times the amount in the soil, it is already at ground level (radiation)’....

“Over a 10-year period of the plant’s operation the total volume of wastes will amount to 2,766,600 cubic meters (EIA, Table 5.51, page 5-54). Over a 20 year period, presumably double the amount. It is inconveivable that there will be enough soil and technology available to ‘dilute’ the wastes and remove its radiation level to natural ground level radiation. This is especially crucial as Lynas plans to

store the wastes onsite in the Residue Storage Facility (RSF)."

60. My solicitors advise me and I verily believe that the failure by the AELB to take into account or to give adequate weight to the public comments submitted to it renders its decision invalid in law.

N. ECONOMIC BENEFITS

61. Because of the pioneer status granted in April 2007 to Lynas for 10 years, Malaysia will not get any economic benefits from the Lynas operation in Malaysia. Lynas will be exempted from paying any corporate tax for 10 years in respect of all income earned from its LAMP operations in Malaysia. Now produced and shown to me and marked as ***Exhibit "Z-36"*** is a copy of the press release by Lynas on 3rd April 2007 and a criticism of the LAMP project from an economic standpoint by Soo Jin Hou and Lee Wee Tak from the Kuantan Environmental Watch Group entitled "*Lynas: An injustice most taxing*" that was published on The Malaysian Insider website on 26th August 2011. Thus, Lynas can repatriate all its earnings, including dividends on shares, to its home jurisdiction, Australia, without having to pay Malaysian tax for 10 years. Lynas also does not have to pay any import duty or sales tax on all raw materials, machinery, equipment and components imported into Malaysia for use in the LAMP site. The LAMP is also not a labour intensive

industry offering employment to thousands of Malaysians, since I verily believe that only about 350 people will work there and it is not clear how many will be Malaysians.

62. We contend that the absolute lack of any economic or financial benefits to the people of Malaysia if the LAMP site starts operations is a relevant consideration that the Board ought to have taken into account when considering the application by Lynas for a TOL. Its failure to do so renders its decision void in law.

**O. IMPROPER SHARING OF REVENUE
BETWEEN LYNAS AND THE BOARD**

63. Our attention was drawn to an article by Keith Bradsher entitled "*The Fear of a Toxic Rerun*" published in the 29th June 2011 issue of the New York Times. Now produced and shown to me and marked as ***Exhibit "Z-37"*** is a copy of the said article. Keith Bradsher has been closely following the Lynas story, and has written numerous articles on it. He is thus very familiar with the matter. In this article, he wrote that Lynas intended to produce rare earth worth US1.7 billion per year from the LAMP site and that "*Lynas agreed to pay 0.05% of the plant's revenue each year to the Malaysian Atomic Energy Licensing Board for radiation research*".

64. One of our researchers carried out a comprehensive internet search on 13th February 2012 on this article. He could not find any corrective statement in the internet whether made by Mr Nicholas Curtis, the Executive Chairman of Lynas or Mr Matthew James, the Executive Vice President of Lynas (who are both quoted in the article) denying the statement in the article that Lynas agreed to pay 0.05% of the plant's annual revenue to the Board for radiation research.
65. Incidentally, it has been stated in numerous articles that Lynas Malaysia would be earning about RM8 billion annually from operations in the LAMP site, for example. Now produced and shown to me and marked as **Exhibit "Z-38"** is a copy of the 18th March 2012 article entitled "*Lynas sees Malaysia rare earth export hitting RM8b a year*" in the Malaysian Insider website which contains this figure.
66. Hence, Mr Bradsher's estimate of US\$1.7 billion in his article is close to the RM8 billion often quoted in articles published in Malaysia.
67. My solicitors advise me and I verily believe that if such a promise was made by Lynas to the Board, then the Board placed itself in a conflict of interest position because it would financially benefit from granting a TOL to Lynas so that the Board can be paid from the revenue generated by Lynas at the LAMP site. In

consequence, the Board's decision is invalid because the Board was no longer independent in the exercise of its statutory discretion. My solicitors advise me that in such circumstances, the decision is void because it is clearly ultra vires.

P. WITHDRAW OF AKZO NOBEL

68. According to an article published in the 31st January 2012 issue of the New York Times, written by Keith Bradsher, Akzo Nobel, a contractor, pulled out of its contract with Lynas to supply resins to the LAMP site. Akzo Nobel, which is a well-known Dutch chemicals multi-national, had agreed to supply resins which are intended to glue together dozens of fibre glass liners for concrete- walled tanks up to the size of double-dealer buses. According to Bradsher's article, engineers involved in the project had safety concerns which prompted Akzo Nobel to withdraw from what would otherwise have been a lucrative contract. Now produced and shown to me and marked as ***Exhibit "Z-39"*** is a copy of the said article entitled "*Rare Earth Metal Refinery Nears Approval*".
69. The withdrawal of Akzo Nobel resulted in numerous articles, and much speculation as to its reasons. According to Lynas, it was a "*purely business*" decision. Now produced and shown to me and marked as ***Exhibit "Z-40"*** is a sample of these articles published from 1st to 3rd February 2012.

Q. STAY

70. All the Applicants live within a radius of 30 miles from the LAMP site. Accordingly, each of us and our families would be directly affected by the discharge or escape of any radioactive waste from the LAMP site.
71. Our homes are in the neighbourhood, vicinity or proximity of the LAMP site. We are in the frontline insofar as health and safety issues are concerned. Lynas owes a duty of care to us. It is foreseeable if any discharge or escape occurs, we would be the first to suffer.
72. Further, our families are most anxious that fish we buy from local fishermen, vegetables and fruits from the local market and even chicken and beef that we may consume in the future may be damaged by radioactive waste. Thus, it may be dangerous for us to eat any of these products once the LAMP site is in operation. Likewise, the water we drink may be contaminated.
73. Indeed, our whole way of life would be severely prejudiced if operations begin.
74. We are advised by our solicitors and verily believe that we possess a constitutionally protected right to enjoy clean environment.

Further, we enjoy the right to ownership and occupation of property, which includes the right not to be injured by radioactive waste caused by our neighbours.

75. We note from the press report issued on behalf of Lynas that they would be ready to start operation within six (6) weeks of the issuance of the TOL. Further, based on the comments made in some of the articles referred to above, rare earth can be processed into oxide within 10 days of the commencement of operations. This would immediately result in the creation of radioactive waste.

76. Accordingly, there is great danger and risk of the creation of radioactive waste occurring in the coming weeks. This would in turn result in irreversible damage to us, to our families and our environment. We are advise by our solicitors and verily believe that in the instant case “*special circumstances*” exist, which would justify a stay Order. Unless a stay Order is granted, such harm would occur.

77. In these circumstances, I pray for an Order in terms of this application, and for a stay Order which would have the effect of prohibiting Lynas from commencing operations until this Judicial Review application is finally disposed.

To an affidavit by one deponent)
ZAKARIA BIN ABDULLAH)
 Affirmed on the 17th day of)

February, 2012 at Kuala Lumpur) (ZAKARIA BIN ABDULLAH)

[Interpretation not required])

Before me

COMMISSIONER FOR OATHS

This affidavit is filed on behalf of the Applicants named above by their solicitors Kanesalingam & Co. whose address for service is at Unit 3.3, Level 3, Wisma Bandar, 18, Jalan Tuanku Abdul Rahman, 50100 Kuala Lumpur.

Tel:03 2698 9199 Fax:03 2698 9799 KLBC BOX 084

Email: shan@kanesalingam.com [Ref:2012s/BADAR/1009]